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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/405,781 09/27/99 BENDA

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IM22/0823

EXAMINER

TRAN, T

ART UNIT

PAPER NUMBER

1741

DATE MAILED:

08/23/01

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 12

Application Number: 09/405,781
Filing Date: 09/27/1999
Appellant(s): Benda, George

Kraft Clifford
For Appellant

EXAMINER'S ANSWER

This is in response to appellant's brief on appeal filed 6/08/2001.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the

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pending appeal is contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

Appellant's brief includes a statement that claims 1 and 3-9 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

Appellant's brief includes a statement that claims 2 and 10-15 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

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(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) *Prior Art of Record*

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

3,844,741	Dimitrik	10-1974
5,835,840	Goswami	11-1998
5,919,422	Yamanaka et al.	7-1999

(10) *Grounds of Rejection*

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102/§ 103

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 6-7, and 9 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Goswami.

Goswami teaches a device for purifying air comprising: a reactor (system) comprising a photocatalyst; an ultraviolet light source, illuminating the photocatalyst; and a heater means (heating coil) (see Figs. 1-3; col. 3-4, lines 62-27). The reference further teaches the warm air passing the photocatalyst before being expelled (see Fig. 1).

Although Goswami is silent with respect to the heater means for drawing air into the reactor by convection and causing the air to rise past the photocatalyst before being expelled, it has been known within the skill in the art that when there is a heating means in a reactor, the air around the heating means would have been inherently caused to rise and this in turn would have inherently caused cooler air from outside to move into the reactor. See *In re Best*, 195 USPQ 430, 433 (CCPA 1977); *In re Napier* 34 USPQ2d 1782, 1784 (Fed. Cir. 1995); *In re Grasselli*, 218 USPQ 769, 775 (Fed. Cir. 1983).

In regards to claim 3, Goswami teaches the photocatalyst being titanium dioxide (see col. 4, lines 29-33).

In regards to claim 6, Goswami teaches a means for controlling humidity in the reactor (see Fig. 1; col. 5, lines 19-22).

In regards to claim 7, Goswami teaches a fibrous mass holding the photocatalyst (see col. 4, lines 28-41).

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In regards to claim 9, Goswami teaches the ultraviolet source emitting light of wavelength shorter than 387 nm (see col. 1, lines 54-57).

4. Claims 1, 3-14 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamanaka et al.

In regards to claims 1 and 10, Yamanaka teaches a device for purifying air, comprising a reactor (photocatalyzer) which comprises a photocatalyst, an ultraviolet light source, a heater means, and an exit port (outlet port) (see abstract; Fig. 10; col. 21, lines 6-12; claims 1-3).

With respect to the function of the heater, the arguments are as set forth in paragraph 6 above.

In regards to claims 3 and 11, Yamanaka teaches the photocatalyst being primarily titanium dioxide (see abstract).

In regards to claims 4-5 and 12-13, Yamanaka teaches that titanium dioxide is doped with platinum (see col. 35, lines 36-38).

In regards to claims 7-8, Yamanaka teaches that fiber glass is the fibrous mass holding the photocatalyst (see claims 1 and 7-8).

In regards to claims 9 and 13-14, Yamanaka teaches the ultraviolet light source emitting light of wavelength in the range of 360-400 nm which reads upon the instantly claimed ranges and also produces visible light (see col. 36, lines 16-33; claim 1).

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Claim Rejections - 35 USC § 103

5. Claims 2, 10-11, and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goswami as applied to claim 1 above.

Goswami is as set forth in claim 1 above and incorporated herein.

Goswami further teaches two electrical leads connecting the device to an electrical source (see col. 4, lines 18-22). Although Goswami is silent with respect to a pair of electrical prongs protruding from the device, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the electrical leads of Goswami for a pair of electrical prongs, because the use of electrical prongs would be functionally equivalent to that of electrical leads. See *In re Dailey*, 149 USPQ 47 (CCPA 1966); *In re Kuhle* 188 USPQ (CCPA 1975).

In regards to claim 10, the arguments are as presented in claims 1-2. Furthermore, Goswami teaches an exit port (outlet) at the top of the device (see Fig. 5; col. 5, lines 57-59; col. 6, lines 39-42).

In regards to claim 11, the arguments are as presented in claim 3.

In regards to claims 13-14, Goswami teaches the ultraviolet light source emitting light of wavelength in the range of 300- 400 nm (see col. 1, lines 54-57) which reads upon the instantly claimed ranges. Furthermore, it has been known that this range of wavelength encompasses visible light.

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6. Claims 15 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamanaka et al. as applied to claims 1 and 10 above.

Yamanaka is as set forth in claims 1 and 10 above and incorporated herein.

Yamanaka teaches a light source which produces visible light and exhibits bright, vivid colors (see col. 36, lines 24-27). Although Yamanaka is silent with respect to an opening that allows the visible light to escape, one of ordinary skill in the art would have expected that a means would be inherently used to allow visible light to escape and exhibit its colors. See *In re Best*, 195 USPQ 430, 433 (CCPA 1977); *In re Napier* 34 USPQ2d 1782, 1784 (Fed. Cir. 1995); *In re Grasselli*, 218 USPQ 769, 775 (Fed. Cir. 1983).

With respect to the use of the device as a night light, it has been held within the skill in the art that function or intended use would play little patentable weight when an apparatus claim is being considered for its patentability. See *In re Danly*, 120 USPQ 528, 531 (CCPA 1959); *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990).

In regards to claim 21, in light of the specification, page 12, the examiner is taking a position in interpreting a chimney as a reactor. Thus, the arguments for claim 21 are as presented in claims 1, 9-10, and 14-15.

7. Claims 2 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goswami as applied to claim 1 above, and further in view of Dimitrik (US Pat. 3,844,741).

Goswami is as set forth in claim 1 above and incorporated herein.

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Goswami teaches two electrical leads connecting the device to an electrical source (see col. 4, lines 18-22). However, Goswami differs from the instant claims in that the reference does not teach a pair of electrical prongs protruding from the device, which can be directly plugged into an electrical outlet.

Dimitrik teaches an air purifier having a plug to connect to a power source (see Fig. 3; col. 3, lines 10-16). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the plug of Dimitrik for the electrical leads of Goswami, depending upon user's preference and intended use, because a plug would be functionally equivalent to electrical leads. See *In re Dailey*, 149 USPQ 47 (CCPA 1966); *In re Kuhle* 188 USPQ (CCPA 1975).

(11) Response to Argument

On pages 13-17 in the Appeal Brief, applicant alleges that the examiner failed to properly construe the means plus function recitations in the claims and that the examiner dismisses the stated function of the heater element drawing air past the photocatalyst as one of inherent effect. The examiner disagrees to this allegation. As pointed out in the Office Action of February 14, 2001, "it ^{has} been known within the skill in the art that when there is a heating means in a reactor, the air around the heating means would have been inherently caused to rise and this in turn would have inherently caused cooler air from outside to move into the reactor" (see paragraph 6) and "it has been known that when there is a heat generator, the air around the heater will rise by convection due to an increase in entropy. This upward movement of the air molecules around the

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heater, in turn, will cause cooler air in other areas, usually outside or below the heater, to move towards the heater, where the molecules absorb heat and rise upward. The whole process of air movement will repeat in the manner mentioned above. Therefore, although neither Goswami nor Yamanaka uses the same functional language as that in the instant claims, since this is an inherent characteristic, Goswami's and Yamanaka's heater means would inherently have the same function as that in the instant claim" (see paragraph 11). It is hereby noteworthy to mention that the convection of air movement discussed here is natural convection as presently claimed as applicant's invention (see The Summary of The Invention and, pages 19-21, under Argument in the Appeal Brief). As the heated air rises and moves upward in Goswami or Yamanaka's apparatus, the heated air would inherently pass the photocatalyst before being expelled as shown in the references' Figures.

On page 22, applicant further reiterates that neither Goswami nor Yamanaka uses convection to move air. As mentioned above, when there is a heat generator, the air around the heater will rise by convection due to an increase in entropy. Therefore, both Goswami and Yamanaka do read on the instant claims. Furthermore, the movement of air due to convection is a natural process and cannot be considered novel.

On pages 22-23, applicant contends that the Dimitrik reference teaches an electrical plug with prongs on the end of a power cord which is quite old in the art and that the reference does not teach the prongs on the actual device for direct plugging and support. Applicant further points out that such a showing does not prove that the invention would have been obvious.

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Applicant is hereby reminded that the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Therefore, applicant's arguments do not comply with 37 CFR 1.111© because they do not clearly point out the patentable novelty which applicant thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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August 18, 2001


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